INDEX

—TO—

VOLUME LII.

TP700
A5

January 1 to June 30, 1890.

A

A Chapter of Don'ts, by W. H. Snow 393
*Addicks, W. R., Vaporization and Feed of Oil to Generator and Retort 356
Address, President's, New England Association. Robert B. Taber 278
Address, President's, Western Gas Association. Chas. R. Faben, Jr 706
Address, President's, Ohio Gas Light Association. Edward Lindsley 463
Adjournment of Ohio Gas Light Association 557
Advantages of a Combined Coal and Water Gas Plant, by Geo A. Light 478
Advantages of Water Gas over Coal Gas for Small Works, by F. H. Parker 320
Advertisers. What They Say 354
Air Engine. A Hot 401
*Alavoine's Gas Washer 433
*Alexander & Paterson Process of Making Oil Gas 72
American Gas Light Association. Appointment of Committees at Meeting of Council 765
Amory, Dr., of Brookline, on Municipal Gas and Electric Lighting 281
Amendment to Constitution, New England Association 280
Ammoniacal Liquor. Economy of Fuel in the Distillation of. 365
An Advance Budget from "Three Stars" 729
An Interesting Chapter in Photometrical Testing, and an Addendum by T. S. Cleminshaw 427
Annual Report (5th) of Massachusetts Gas and Electric Light Commissioners 140
Annual Meeting of the Springfield (Mass.) Gas Company 141
Another Loomis Patent in England 882
*Another Step in the Granger Process 71
A Point or Two in Regard to Illuminants During Condensation and Purification, by Geo. F. Goodno 391
*Apparatus for Manufacturing Gas. Close's 5
*Apparatus for Washing Gas. Dye's 698
Applications for, and Election to, Membership, New England Association 248
Appointing Special Committees, Western Gas Association 916
Appointment of Committees, Ohio Association 433
Aqueduct, Methods of Lighting Work on the New Croton 74
Argument in Favor of the Municipal Ownership of Electric Lighting Plants, by Victor Rosewater 423
Assay of Coal 918
Associated Press Once More, The 801
Australia, Progress of the Electric Light in 699

B

Badges, in the Matter of, New England Association 355
Batch of Invitations, A. Western Association 912
Baths. Dangers of Gas and Geyser 735
Benson, Arthur W.—Obituary 2
*Blower. Steel Pressure 136
Boiling of Water is not a Guarantee of Purity, The 885
Boilers, Preventing the Incrustation of 249
Bowers, Geo. W., Combination of Gas and Electric Lighting in a Small Town 465
[illegible]cess Company for New York, A 846
[illegible] Coal. The Possible Average Depth at which it is now Worked 214
British Gas Works, Water Gas for, by C. J. R. Humphreys 210
Budget from "Three Stars," An Advance 729
Burners, Gas, for Illuminating Purposes 731
By-Products of Experience, by A. R. Foote 879

C

*Carburetor for Gas Engines 40
Carcass Roofing, by J. Robinson 735
Car Lighting 172
*Charging Gas Retort Furnaces with Hot Residual Coke, Device for 210
*Charging Inclined Gas Retorts, Device for 428
Change of Interests in the Siemens-Lungren Company 801
Cheapest Light, The 597
Chemistry of Illuminating Gas, by N. H. Humphrys 39
Chemistry of the Dinsmore Process 774
Chimney Proportion 44
*Chollar, B. E., Doubts Versus Dogmatism 485
Chollar, B. E., The Relative Value of Gaseous Fuels 802
Clark, Walton, The World's Fair and the Gas Associations 838
Claus' Method of Producing Water Gas and Obtaining Certain Bye Products 244
Cleminshaw, T. S., An interesting Chapter in Photometrical Testing, and an Addenda 427
*Close Gas Manufacturing Apparatus 5
Coal Industry, The Illinois 73
Coal Miners' Strike and London Fuel Supply 561
Coals in Western Canada, Notes on Some 662
Coal Fields of the State of Washington, by W. J. Wood 665
Coal, Assay of 918
Coke and Charcoal Compared 43
Coke Manufacture Utilization of Residuals from 104
Coke Brick for Furnace Linings 329
Combination of Gas and Electric Lighting in a Small Town, by Geo. W. Bowers 465
Combustion, Spontaneous, in Coal Ships 700
Competition, The Effect of Natural Gas, by Jas. Somerville 911
Conductors, Deterioration of Electrical 41
Connellsville Coke Trade, The 249
*Conroy's Cut-Off and Relief Apparatus for Gas Mains 558
Construction of Gas Holder Tanks 664
Controversy, The Incandescent Light 42
Conversion of Gas Globes into Regenerative Lamps 75
Corrosion 79
*Cash's Apparatus for the Manufacture of Gas 732
*Cowell's Device for Carrying off Leakage from Gas Mains 593
Cowdery, E. G., on Mixed Gases 910
Coze's System, Improvements on 178
Cushing, Oliver E., Death of 69

COMMITTEES:—New England Association of Gas Engineers.—Invitations, 248; President's Address, 280-391; Nomination of Officers, 281-326; Memorial, 281; World's Fair, 326-394; Badges, 326-394.

————Ohio Gas Light Association.—Membership, 431; Executive, 431; Legislation, 431; Place of Next Meeting, 433; Nominations, 433-552; President's Address, 465; Location, 518.

————American Gas Light Association 765

————Western Gas Association.—President's Address, 769-840; Board of Directors, 769; Membership, 769; On Examination of Books and Accounts of Secretary and Treasurer, 769; Visitors, 769; Nomination of Officers, 769-842; Resolutions, 769-916; Obituary Resolution, 769-808; Place of Next Meeting, 842-916; Gimper Paper, 842; Gas Companies' Accounts, 874; Arrangements, Louisville Meeting, 916.

CORRESPONDENCE—

Electric Lighting at St Louis 969
Explosion at the St. Paul (Minn.) Gas Works. B. F. Ellisen 206
Dr. Wilkinson Objects to the Figures 70
Gas Companies Should Control the Introduction of Gas Stoves, by S. S. Stratton 705
The Lighting Situation at Fort Scott, Kas 145

D

Danger, Fire, from Outside Electric Currents 397
Dangers of Gas and Geyser Baths 735
Dangers of Electric Lighting, by S. Z. de Ferranti and Francis Ince 138, *175
Death of Oliver E. Cushing 69, 101, 586
Death of Dr. Lull, President of the Dubuque (Iowa) Key City Gas Company 170
Death of Alfred Arndt 808
Death of Arthur W. Benson 2
Death of Thomas A. Cosgrove 809
Death of Theobald Forstall 102
Death of Walter Burchard Houston 513
Death of James Henri Rollins 909
Death of Edward J. King 806, 808
Demand for More Ligh 139
Depth (the Possible Average) at Which Coal is Worked in England 214
Deterioration of Electrical Conductors 41
*Device for Charging Gas Retort Furnaces with Hot Residual Coke 210
*Device for Testing the Gradients of Pipes 212
*Device for Charging Inclined Retorts 428
Deville's, M. Sainte-Claire, Study of Coal Gas 207
Did Dr. Wilkinson Confine Himself to Facts? by James Somerville 695
Difference in the Eastern and Western Methods of Management of Gas Works, by E. G. Pratt 318
Dinsmore Process, The Chemistry of the 774
Dinsmore Process, The 9
Discharge of Steam through Orifices 633
Distributory Plant, Notes on 695
Don'ts, A Chapter of, by W. H. Snow 393
*Doubts Versus Dogmatism, by B. E Chollar 485
Draft, Chimney, Note on Rankine's Treatment of, by Prof. J. B. Webb 171
*Dye's Apparatus for Washing Gas 698

E

Economical Engine for Small Power. On the Most 217
Economy of Fuel in the Distillation of Ammoniacal Liquor 365
Education, Technical 213
Egner, Frederic. Practical Hints on Purification with Lime 462
Egner, Frederic. A Page from Experience with an Exhauster. 3
Egner, Frederic, On the Abuse of the Patent System, with a Remedy 770
Election of New Members, Ohio Gas Light Association 432
Election of Officers, Ohio Gas Light Association 552
Election of Officers, New England Association 326
Election of New Members, Western Gas Association 802
Election of Officers, Western Gas Association 842
Electing Mr. H. B. Leach to Honorary Membership, Western Association 802
Electric Lighting of Ships 75
Electric Wiring in Boston Buildings, Proposed Legislation in the Matter of 3
Electric Lighting, Dangers of, by S. Z. de Ferranti and Francis Ince 138, *175
*Electric Meters, Three Types of 176
Electric Tests, Influence of Temperature on 181
Electric Light at the British Museum 217
Electric Currents, Fire Dangers from Outside 397
Electric Units, Thoughts on 398
Electric Conductors, Deterioration of 41
Electric Ignition of Gas Engines 697
Electricians, The Vagaries of the 212
Engine, Hot Air 401
Engineers, Useful Memoranda and Information for 705
English Lighting Methods, President Peaty's Views on the Status of 390
Evans, C. H. Another Year with Fuel Gas 515
Exhaust and Pressure Registers and Pressure Gauges 71
Examination of Commercial Glycerine 7
*Experience with Subsided Gas Mains 557
Experiments on the Relation of Electric Lamps to Combustible Bodies 38
Exhibition of Gas Apparatus, Western Gas Association 809
Excavating, The Poetsch System of, by E. L. Abbott 734
Experiments in the Photometer Room, by N. W. Gifford 317

EDITORIALS—

A Banquet Response 426
A Bad Verdict 730

INDEX

—TO—

VOLUME LII.

TP700
A5

January 1 to June 30, 1890.

A

A Chapter of Don'ts, by W. H. Snow 393
*Addicks, W. R., Vaporization and Feed of Oil to Generator and Retort 356
Address, President's, New England Association. Robert B. Taber 278
Address, President's, Western Gas Association. Chas. R. Faben, Jr 706
Address, President's, Ohio Gas Light Association. Edward Lindsley 463
Adjournment of Ohio Gas Light Association 557
Advantages of a Combined Coal and Water Gas Plant, by Geo A. Light 478
Advantages of Water Gas over Coal Gas for Small Works, by F. H. Parker 320
Advertisers. What They Say 354
Air Engine. A Hot 401
*Alavoine's Gas Washer 433
*Alexander & Paterson Process of Making Oil Gas 72
American Gas Light Association. Appointment of Committees at Meeting of Council 765
Amory, Dr., of Brookline, on Municipal Gas and Electric Lighting 281
Amendment to Constitution, New England Association 280
Ammoniacal Liquor. Economy of Fuel in the Distillation of. 365
An Advance Budget from "Three Stars" 729
An Interesting Chapter in Photometrical Testing, and an Addendum by T. S. Cleminshaw 427
Annual Report (5th) of Massachusetts Gas and Electric Light Commissioners 140
Annual Meeting of the Springfield (Mass.) Gas Company 141
Another Loomis Patent in England 882
*Another Step in the Granger Process 71
A Point or Two in Regard to Illuminants During Condensation and Purification, by Geo. F. Goodno 391
*Apparatus for Manufacturing Gas. Close's 5
*Apparatus for Washing Gas. Dye's 698
Applications for, and Election to, Membership, New England Association 248
Appointing Special Committees, Western Gas Association 916
Appointment of Committees, Ohio Association 433
Aqueduct, Methods of Lighting Work on the New Croton 74
Argument in Favor of the Municipal Ownership of Electric Lighting Plants, by Victor Rosewater 423
Assay of Coal 918
Associated Press Once More, The 801
Australia, Progress of the Electric Light in 699

B

Badges, in the Matter of, New England Association 355
Batch of Invitations, A. Western Association 912
Baths. Dangers of Gas and Geyser 735
Benson, Arthur W.—Obituary 2
*Blower. Steel Pressure 136
Boiling of Water is not a Guarantee of Purity, The 885
Boilers, Preventing the Incrustation of 249
Bowers, Geo. W., Combination of Gas and Electric Lighting in a Small Town 465
[illegible]cess Company for New York, A 846
[illegible] Coal. The Possible Average Depth at which it is now Worked 214
British Gas Works, Water Gas for, by C. J. R. Humphreys 210
Budget from "Three Stars," An Advance 729
Burners, Gas, for Illuminating Purposes 731
By-Products of Experience, by A. R. Foote 879

C

*Carburetor for Gas Engines 40
Carcass Roofing, by J. Robinson 735
Car Lighting 172
*Charging Gas Retort Furnaces with Hot Residual Coke, Device for 210
*Charging Inclined Gas Retorts, Device for 428
Change of Interests in the Siemens-Lungren Company 801
Cheapest Light, The 597
Chemistry of Illuminating Gas, by N. H. Humphrys 39
Chemistry of the Dinsmore Process 774
Chimney Proportion 44
*Chollar, B. E., Doubts Versus Dogmatism 485
Chollar, B. E., The Relative Value of Gaseous Fuels 802
Clark, Walton, The World's Fair and the Gas Associations 838
Claus' Method of Producing Water Gas and Obtaining Certain Bye Products 244
Cleminshaw, T. S., An interesting Chapter in Photometrical Testing, and an Addenda 427
*Close Gas Manufacturing Apparatus 5
Coal Industry, The Illinois 73
Coal Miners' Strike and London Fuel Supply 561
Coals in Western Canada, Notes on Some 662
Coal Fields of the State of Washington, by W. J. Wood 665
Coal, Assay of 918
Coke and Charcoal Compared 43
Coke Manufacture Utilization of Residuals from 104
Coke Brick for Furnace Linings 329
Combination of Gas and Electric Lighting in a Small Town, by Geo. W. Bowers 465
Combustion, Spontaneous, in Coal Ships 700
Competition, The Effect of Natural Gas, by Jas. Somerville 911
Conductors, Deterioration of Electrical 41
Connellsville Coke Trade, The 249
*Conroy's Cut-Off and Relief Apparatus for Gas Mains 558
Construction of Gas Holder Tanks 664
Controversy, The Incandescent Light 42
Conversion of Gas Globes into Regenerative Lamps 75
Corrosion 79
*Cash's Apparatus for the Manufacture of Gas 732
*Cowell's Device for Carrying off Leakage from Gas Mains 593
Cowdery, E. G., on Mixed Gases 910
Coze's System, Improvements on 178
Cushing, Oliver E., Death of 69

COMMITTEES:—New England Association of Gas Engineers.—Invitations, 248; President's Address, 280-391; Nomination of Officers, 281-326; Memorial, 281; World's Fair, 326-394; Badges, 326-394.

————Ohio Gas Light Association.—Membership, 431; Executive, 431; Legislation, 431; Place of Next Meeting, 433; Nominations, 433-552; President's Address, 465; Location, 518.

————American Gas Light Association 765

————Western Gas Association.—President's Address, 769-840; Board of Directors, 769; Membership, 769; On Examination of Books and Accounts of Secretary and Treasurer, 769; Visitors, 769; Nomination of Officers, 769-842; Resolutions, 769-916; Obituary Resolution, 769-808; Place of Next Meeting, 842-916; Gimper Paper, 842; Gas Companies' Accounts, 874; Arrangements, Louisville Meeting, 916.

CORRESPONDENCE—

Electric Lighting at St Louis 969
Explosion at the St. Paul (Minn.) Gas Works. B. F. Ellisen 206
Dr. Wilkinson Objects to the Figures 70
Gas Companies Should Control the Introduction of Gas Stoves, by S. S. Stratton 705
The Lighting Situation at Fort Scott, Kas 145

D

Danger, Fire, from Outside Electric Currents 397
Dangers of Gas and Geyser Baths 735
Dangers of Electric Lighting, by S. Z. de Ferranti and Francis Ince 138, *175
Death of Oliver E. Cushing 69, 101, 586
Death of Dr. Lull, President of the Dubuque (Iowa) Key City Gas Company 170
Death of Alfred Arndt 808
Death of Arthur W. Benson 2
Death of Thomas A. Cosgrove 809
Death of Theobald Forstall 102
Death of Walter Burchard Houston 513
Death of James Henri Rollins 909
Death of Edward J. King 806, 808
Demand for More Ligh 139
Depth (the Possible Average) at Which Coal is Worked in England 214
Deterioration of Electrical Conductors 41
*Device for Charging Gas Retort Furnaces with Hot Residual Coke 210
*Device for Testing the Gradients of Pipes 212
*Device for Charging Inclined Retorts 428
Deville's, M. Sainte-Claire, Study of Coal Gas 207
Did Dr. Wilkinson Confine Himself to Facts? by James Somerville 695
Difference in the Eastern and Western Methods of Management of Gas Works, by E. G. Pratt 318
Dinsmore Process, The Chemistry of the 774
Dinsmore Process, The 9
Discharge of Steam through Orifices 633
Distributory Plant, Notes on 695
Don'ts, A Chapter of, by W. H. Snow 393
*Doubts Versus Dogmatism, by B. E Chollar 485
Draft, Chimney, Note on Rankine's Treatment of, by Prof. J. B. Webb 171
*Dye's Apparatus for Washing Gas 698

E

Economical Engine for Small Power. On the Most 217
Economy of Fuel in the Distillation of Ammoniacal Liquor 365
Education, Technical 213
Egner, Frederic. Practical Hints on Purification with Lime 462
Egner, Frederic. A Page from Experience with an Exhauster. 3
Egner, Frederic, On the Abuse of the Patent System, with a Remedy 770
Election of New Members, Ohio Gas Light Association 432
Election of Officers, Ohio Gas Light Association 552
Election of Officers, New England Association 326
Election of New Members, Western Gas Association 802
Election of Officers, Western Gas Association 842
Electing Mr. H. B. Leach to Honorary Membership, Western Association 802
Electric Lighting of Ships 75
Electric Wiring in Boston Buildings, Proposed Legislation in the Matter of 3
Electric Lighting, Dangers of, by S. Z. de Ferranti and Francis Ince 138, *175
*Electric Meters, Three Types of 176
Electric Tests, Influence of Temperature on 181
Electric Light at the British Museum 217
Electric Currents, Fire Dangers from Outside 397
Electric Units, Thoughts on 398
Electric Conductors, Deterioration of 41
Electric Ignition of Gas Engines 697
Electricians, The Vagaries of the 212
Engine, Hot Air 401
Engineers, Useful Memoranda and Information for 705
English Lighting Methods, President Peaty's Views on the Status of 390
Evans, C. H. Another Year with Fuel Gas 515
Exhaust and Pressure Registers and Pressure Gauges 71
Examination of Commercial Glycerine 7
*Experience with Subsided Gas Mains 557
Experiments on the Relation of Electric Lamps to Combustible Bodies 38
Exhibition of Gas Apparatus, Western Gas Association 809
Excavating, The Poetsch System of, by E. L. Abbott 734
Experiments in the Photometer Room, by N. W. Gifford 317

EDITORIALS—

A Banquet Response 426
A Bad Verdict 730

INDEX TO VOL. LII.

A Correction 874
A Correction 622
An Application for an Opposition Charter at Freeport, Ill. 70
A Model Circular 514
Annual Meeting, Port Hope (Ont.) Gas Company 802
Annual Meeting, Lebanon, Pa 37
Annual Meeting, Clinton, Mass 242
Annual Report, Superintendent of Public Lamps, Boston, Mass 242
Annual Meeting, Bridgeport, Conn 550
Annual Meeting, Rochester, Minn 550
An Old-New Firm 37
Another Instalment from the Western's Secretary 586
Arc Lighting at Boston, Mass 69
Attempting to Settle the Baltimore (Md.) Gas Question .. 206
A Weekly Edition of the Electrical Engineer 390
Bids for Public Lighting, New York City 513
Cheaper Gas for Peoria, Ill 170
Dearer Gas for London 874
Death of Dr. Lull 170
Death of Mr. Wm. H. McClave 390
Doings of the Davis & Farnum Manufacturing Company . 874
Electric Light Installations, etc 314
Exhibits and Exhibitors at the Western Gas Association .. 801
Exit the Wakefield Manufacturing Company 658
Flemming Benches at Philadelphia 134
Further Hints from Alton, Ill 837
Gas Stocks as Investments 37
Hints from Alton, Ill 461
How Things are Going Along at Ironton, Ohio 837
In Bad Faith 278
Mandamus Proceedings, Supreme Court, Philadelphia, Decided Against the Trustees of the Roman Catholic High School 134
Mayor Noonan Routs the St. Louis Gas Grabbers 2
Mr. Todd's Policy 658
Mr. Hallett's Success at Springfield, Mass 134
Mr. Hallett's Resignation from the Springfield Company . 134
Mr. Greenough on Municipal Light Supply 390
Mr. Stedman Tells the Whole Truth 910
Mr. Yorke Writes a Book 837
Notes—Editorial 514, 550, 586, 622, 658, 694, 730, 802, 838
Obituary—James Henri Rollins 909
Obituary Resolutions—Society of Gas Lighting 586
Obituary—Oliver E. Cushing 101
Obituary—Theobald Forstall 102
Obituary Note—William Parrish, Seneca Falls, N. Y 134
Obituary Note—Walter Burchard Houston 513
Opposition at St. Joseph, Mo 354
On to Washington Once More 550
Public Lighting Awards, New York City 586
Putting the Blame Where it Belongs 873
Recommending a Change in the Massachusetts Carbonic Oxide Regulations 206
Scant Justice 461
The Amendment was not Accepted by the Gas Company .. 69
The Day is at Hand 694
The Entertainment Programme for the St. Louis Meeting 658
The Gas Works Safe at Louisville, Ky 425
The Gas Exhibit at St. Louis 622
The Gas Statistics Branch of the Eleventh Census 694
The Latest Gun from Toledo 314
The Meeting at Toledo 389
The Meeting at Dallas, Texas 314
The New England's Twentieth Annual 170
The Paper List for the St. Louis Convention 622
The Rhode Island Gas Grab 461
The Slater and Parker Papers 314
The Toledo Meeting 278
The Toledo Convention 425
The Western's Thirteenth Annual 765
*The Western Gas Association Cup 838
The Wakefield Manufacturing Company 426
The Western's Thirteenth Annual 549
The Year's Record 1
Tidings from the New England Meeting 241
Uniform Them 462
What Advertisers Say 354

F

Faben, Charles R., Jr. Graduated vs. Uniform Rates 468
Faben, Charles R., Jr. Inaugural Address Western Gas Association 766
Facts and Figures Connected with the Installation and Operation of an Electric Light Plant, by John J. Power 314
Fair, The World's, and the Gas Associations, by Walton Clark 838
Felling an Electric Light Pole, Operation of 137
Ferranti, de, S. Z. and Francis Ince. Dangers of Electric Lighting 138-*175
Fields for Scientific Research 659
Financial Aspect of Natural Gas, by Charles Harrison 177
Fire, Danger from Outside Electric Currents 397
Flames 881
*Flannery's Patent Gas and Liquid Holder 135
Foote, A. R., By-Products of Experience 879
Foote, A. R. Municipal Control of Gas and Electric Light Plants 474
*Former for Square Pipe 75
*Fouli's Regenerative Furnace 41
Foundations, The Limiting Pressure Upon 105
Fowler, S. J. Management of a Small Gas and Electric Light Plant 324
Fuel Gas, Notes on, by G. W. Goetz 362
Fuel, Economy of, in the Distillation of Ammoniacal Liquor .. 365
Fuel Gas, Another Year with, by C. H. Evans 515
Furnace Linings, Coke Brick for 329

G

Gas Manufacturing Apparatus, Close 5
Gas Stocks, 14, 146, 182, 218, 254, 290, 330, 366, 402, 437, 490, 526, 562, 598, 634, 670, 706, 742, 778, 886
Gas Illuminating, Chemistry of, by N. H. Humphrys 39
*Gas Engines, Carburetor for 40
*Gas Washer, The Kusnezor 42
*Gas. The Alexander and Paterson Process of Making Oil 72
Gas Globes, Conversion of, into Regenerative Lamps 75
*Gas and Liquid Holder, Flannery's 135
Gas and Electricity, by Jno. West 172
*Gas Engine, Test of an Otto, by E. Kidwell and E. R. Keller 208
*Gas Washer, The Walker 211
*Gasholder, The Northwich, on Messrs. Gadd & Mason's Principle, by Thomas Newbigging 243
Gas Making, Profit in 250
Gas, The Quality of, London 401
*Gas Washer, Alavoines 433
*Gas Fired Boiler. Thwaite's 523
*Gas Manufacture, Leisners's Apparatus for 660
Gas Engines with Electrical Ignition 697
Gas Burners, for Illuminating Purposes 731
*Gas, Cosh's Apparatus for the Manufacture of 732
Gas and Geyser Baths, Dangers of 735
Gas Apparatus Exhibition, Western Gas Ass'n 809
Gas Accounts, The "Express Company" System of Collecting . 846
Gas Light and Coke Company, and Their Men, The 881
Gauges, and Pressure and Exhaust Registers, Pressure 71
Gemunder, M. A., Municipal Control of Gas Works 473
Gibbs, Prof. Wolcott, on Illuminating Gas 486
Gimper, Surprises the Chair, Western Ass'n 769
Glasgow Corporation Gas Works, The Three-Lift Holder at Dawsholm Station 427
Glycerine, Examination of Commercial 7
Goetz, G. W., Notes on Fuel Gas 362
Goodno, Geo. F., A Point or Two in Regard to Illuminants during Condensation and Purification 391
Graduated vs. Uniform Rates, by Chas. R. Faben, Jr 468
*Granger Process, Another Step in the 71
*Guiding for Gasholders, Terrace's Parallel Motion for 662

H

Hallett, J. L. Looking Backward 103
Harrison, Charles. The Financial Aspect of Natural Gas 177
Hatteras Light, The Proposed 249
Hedges, W. C. Ohio Street Lighting Statistics, with Table of Prices 477
Holder, The Three-Light, at Dawsholm Station of the Glasgow Corporation Gas Works 427
Hot Air Engine 401
How to Manage Steam Engines, by B. Taylor 846
Humphrys, N. H., Chemistry of Illuminating Gas 39
Humphrys, N. H., Special English Correspondence, 108, 286, 434, 594, 737, 917
Humphreys, C. J. R. Water Gas for British Gas Works 210
Hyde, G. A., Sr Our New Coal Gas Works 482
Hydraulic Engineering, Ingenious Expedient in 705

I

Identity of Light and Electric Radiation, The 710
Illuminating Gas, Prof. Wolcott Gibbs, on 486
" " Chemistry of, by N. H. Humphrys 39
Illinois Coal Industry 73
Illuminating Power and Specific Gravity of Coal Gas 136
Illuminants, A Point or Two in regard to same during Condensation and Purification, by Geo. F. Goodno 391
*Impressions of British Gas Works, by Geo. T. Thompson 843
Improvements on Coze's System 178
Inaugural Address, Western Gas Assn., Chas. R. Faben, Jr... 766
India, Oil in 774
Ince, Francis, and S. Z. de Ferranti, Dangers of Electric Lighting 138, *175
Incandescent Light Controversy 42
Incrustation of Boilers, Preventing the 249
Incandescent Lamps on Buoys 7
Incandescent Lamp Bulbs, Tinting 251
Increasing the Consumption of Gas for Cooking and Heating Purposes. A Method of 592
*Indicator, The Meyer Valve 396
Influence of an Idea 485
Influence of Temperature on Electric Tests 181
Ingenious Expedient in Hydraulic Engineering 705
In Memoriam, Mr. Oliver E. Cushing 396
In Memoriam Proceedings, Western Gas Assn:
(Eulogizing Ex-President Edward J. King) 806
The Forstall Memorial 808
The King Memorial 808
The Arndt " 808
The Cosgrove " 809
The Fullagar " 809
Introducing the President-Elect, Western Gas Assn 842
" " Visitors, " " " 769
In the Matter of Badges, New England Assn 355
Introducing the New Members, Ohio Gas Light Assn 519
Invitations, A Batch of, Western Gas Association 912
Invitations, Reading the, New England Association 281
Iron Work, Paints and Painting for 107
Items of Interest from Various Localities, 11, 45, 77, 109, 142, 179, 214, 251, 287, 327, 363, 399, 435, 487, 523, 559, 595, 630, 677, 702, 739, 775, 811, 847, 883, 919

J

Jackets, Steam, Their Mode of Action and the Reasons of their Economy 8
*Jones' Safety Device for Gas or Air Pipes 624

K

*Kidwell, E., and E. R. Keller. Test of an Otto Gas Engine. 208
King, Edward J. In Memoriam Resolutions 806
Mr. Ramsdell's Tribute 806
Capt. W. H. White's Tribute 807
Mr. James Somerville's Tribute 808
*Kusnezor Gas Washer 42

L

Labor-Saving Appliances for the Manufacture of Coal Gas, by William Mooney 623
Lamps, Incandescent, on Buoys 7
Leach, H. B., Elected to Honorary Membership, Western Gas Association 802
*Leakage from Gas Mains, Cowell's Device for Carrying off .. 593
Learned, W. A, on the Revivification of Oxide of Iron 316
Legislation in the Matter of Electric Wiring in Boston Buildings 3
*Leisner's Apparatus for Manufacturing Gas 660
Letters of Regret, Ohio Gas Light Association 432
Letters of Regret, New England Association of Gas Engineers 248
Light, Demand for More 139
Light, Electric, at the British Museum 217
Light, Geo. A. Advantages of a Combined Coal and Water Gas Plant 478
Light, The Cheapest 597
Lighting Work on the New Croton Aqueduct, Method of 74
Lighting of an Imperial Railway Train 75
Lighting of Ships, Electric 75
Lighting Cars 172
Lighting the Bottom of the Sea, An Ingenious Device for 633
Lime, Practical Hints on Purication with, by F. Egner 462
Life and Efficiency of Electric Arc Light Carbons, by L. B. Marks 628
Limiting Pressure upon Foundations, The 105
Lindsley, Edward. President's Address Ohio Gas Light Association 463
*Lock-Joint Pipe, Matheson's 881
London. The Gas Light and Coke Company and Their Men .. 881
London Gas, The Quality of 401
Looking Backward, by J. L. Hallett 103
Loomis Patent in England, Another 882
Lubricants, Notes on the Action of, by Prof. J. E. Denton .. 629
Luminous Paint 181

M

Mains (Street), Which is the Best Material for, Wrought Iron, Cast Iron or Steel, by Eugene Printz 912
Management of Gas Works, Difference in Eastern and Western Methods, by E. C. Pratt 318
Management of a Small Gas and Electric Light Plant, by S. J. Fowler 324
Manufacture of Water Gas, Mr. Trewby on the 106
Manufacture of Oxygen for Industrial Use 396
Manure, Sulphate of Ammonia as a 315
Market for Gas Securities, 2, 38, 70, 102, 146, 182, 206, 242, 290, 330, 365, 402, 437, 462, 514, 550, 586, 622, 658, 694, 730, 777, 802, 838, 874, 910
Marks, L. B., Life and Efficiency of Electric Arc Light Carbons. 628
Massachusetts Supreme Judicial Court Differs from Attorney-General Waterman 809
Massachusetts Board of Gas and Electric Light Commissioners' Fifth Annual Report 140
Massachusetts Board of Gas and Electric Light Commissioners on the Subject of Water Gas 24
*Matheson's Patent Lock-Joint Pipe 881
*Measuring Electric Lighting Values, Note on a new Photometer for 810
Meeting, Place of, New England Association 356
Measurements, Modern 917
Melting Steel by Water Gas 633
Memorial to the late Mr. Oliver E. Cushing 396
*Meters, Three Types of Electric 176

INDEX TO VOL. LII.

Method of Increasing the Consumption of Gas for Cooking and Heating Purposes ... 592
Methods of Lighting Work on the New Croton Aqueduct ... 74
*Meyer Valve Indicator ... 396
Mixed Gases, by E. G. Cowdery ... 910
Mooney, Wm., Labor-Saving Devices fot the Manufacture of Coal Gas ... 623
Most Economical Engine for Small Power ... 217
Municipal Control of Gas and Electric Lighting, by Dr. Amory ... 281
Municipal Ownership of Electric Lighting Plants, An Argument in Favor of the, by Victor Rosewater ... 429
Municipal Control of Lighting, by H. Wilkiemeyer ... 471
Municipal Control of Gas Works, by M. A. Gemunder ... 473
Municipal Control of Gas and Electric Plants, by A. R. Foote ... 474

N

Naphthaline, Mr. Watson Smith on ... 6
Natural Gas, The Financial Aspect of, by Charles Harrison ... 177
New Members, Election of, Ohio Gas Light Association ... 432
New Members, Introduction of, Ohio Gas Light Association ... 519
News from the Absent Secretary, New England Association ... 326
*Northwich Gasholder, on Messrs. Gadd and Mason's Principle, by Thomas Newbigging, C. E ... 243
Norton, H. A. Various Methods of Introducing Gas Stoves ... 322
Notes Taken in a Small Gas Works, by Ralph Woodward ... 355
Notes on Fuel Gas, by G. W. Goetz ... 302
Notes on the Action of Lubricants, by Prof. J. E. Denton ... 629
Notes on Some Coals in Western Canada ... 622
Notes on Distributary Plant ... 695

O

OBITUARY—

Alfred Arndt ... 808
Arthur W. Benson ... 2
Thomas A. Cosgrove ... 809
Oliver E. Cushing ... 69, 101
Theobald Forstall ... 102
Walter Burchard Houston ... 513
Edward J. King ... 806, 808
James Henri Rollins ... 909
Obituary Resolutions Society of Gas Lighting ... 586

OFFICIAL NOTICES—

Western Gas Association ... 513, 549, 585, 621, 657, 693
New England Association of Gas Engineers ... 37, 69, 101, 133, 169, 205
Ohio Gas Light Association ... 101, 133, 169, 206, 241, 277, 313, 353
South Western Gas Association ... 277, 313

OFFICIAL REPORTS—

Twentieth Annual Meeting of the New England Association of Gas Engineers ... 248, 278, 316, 355, 391
Thirteenth Annual Meeting of the Western Gas Association ... 766, 802, 838, 874, 910
Sixth Annual Meeting of the Ohio Gas Light Association ... 431, 463, 515, 551

Oil in India ... 774
On Testing Materials ... 663
Opinion of the Attorney-General of Massachusetts in Respect to the Rights of Cities and Towns to Operate Gas and Electric Light Plants ... 738
Operation of Felling an Electric Light Pole ... 137
Origin of the Rock Pressure of Natural Gas in the Trenton Limestone of Ohio and Indiana ... 105
Our New Coal Gas Works, by G. A. Hyde, Sr ... 482
Oxygen for Industrial Use, The Manufacture of ... 396

P

Paint, Luminous ... 181
Paints and Painting for Iron Work ... 107
Parker, F. H., A Few of the Advantages of Water Gas over Coal Gas for Small Works ... 320
Patent Issues, Recent ... 13, 145, 329, 437
Patent System, On the Abuse of the, With a Remedy, by F. Egner ... 770
*Paterson and Alexander Process of Making Oil Gas ... 72
Petroleum Market for 1889 ... 44
Petroleum in Servia ... 561
Photometer Room, Some Experiments in the, by N.W. Gifford. 317
Photometrical Testing, An Interesting Chapter in, with Addenda, by T. S. Cleminshaw ... 427
*Photometer, Note on a New, for Measuring Electric Lighting Values ... 810
Pile Protection ... 140
*Pipes, Jones' Safety Device for Gas or Air ... 624
*Pipe, Matheson's Lock-Joint ... 881
Place of Meeting New England Association ... 396
Poetsch System of Excavating. The, by E. L. Abbott ... 734
*Portable Photometer for Electric Lights ... 733
Postponing the Election of New Members, Western Gas Association, ... 769
Power, John J., Facts and Figures Connected with the Installation and Operation of an Electric Light Plant ... 314
Pratt, E. G., on Difference in Eastern and Western Methods of Management of Gas Works ... 318
Pressure Gauges and Pressure and Exhaust Registers ... 71
Pressure upon Foundations, The Limiting ... 105
Pressure Blower, Steel ... 136
Preventing the Incrustation of Boilers ... 249
President's Address, New England Association, Robt. B. Taber ... 278
President Peaty's Views on the Status of English Lighting Methods ... 350
President's Address, Edward Lindsley, Ohio Gas Light Association ... 463
President's Address, Western Gas Association, Chas. R. Faben, Jr ... 766
Preservation of Wood by Chemical Means ... 666
*Prindle's Retort Lid ... 4
Printing of Papers, New England Association ... 326
Printz, Eugene, Street Mains, Which is Best Material for, Wrought Iron, Cast Iron or Steel ... 912
Proposed Hatteras Light, The ... 249
Profit in Gas Making ... 250
Problems Constantly before the Gas Manager, by E. H. Yorke ... 359
Profit Sharing ... 625
Progress of the Electric Light in Australia ... 699
Public Lighting Bids for New York City ... 513
Public Street Lighting in New York ... 521
Purifying Boxes, Is Plate Steel or Cast Iron the Best Construction for ... 478
Purifying Boxes, What Treatment or Care Secures the Longest Life of ... 478
Purification with Lime, Practical Hints on, by F. Egner ... 462

Q

Quality of London Gas ... 401
Question-Box, New England Association ... 394
Effect of Oil as an Enricher on Meters ... 394
Dissatisfaction Caused by Reduction, to Users of Gas Stoves ... 364
Number of Days to allow for Payment of Gas Bills ... 394
Repairing Leaks Temporarily in Holders ... 395
Question-Box, Ohio Gas Light Association ... 519-551-555
Does a fine Gas of 23 to 25 Candles Help Check the Invasion of the Electric Light ... 520
Is Not Illuminating Gas of the Requisite Candle Power, Sold at a Reduced Price for Fuel, the True Solution of the Fuel Gas Problem ... 552

R

Radiation, Electric, and the Identity of Light ... 700
*Rankine's Treatment of Chimney Draft, by Prof. J. B. Webb 171
Raw Material in Gas Manufacture, The Waste of ... 627
Reading the Invitations, New England Association ... 281
Reading the Papers, Western Gas Association ... 770
Recent Patent Issues:—13-145-329-437
*Regenerative Furnace, The Foulis ... 41
Relation of Electric Lamps to combustible Bodies, Experiments on the ... 38
*Relief Apparatus and Cut-Off for Gas Mains, Conroy's ... 558
Relative Value of Gaseous Fuel, by B. E. Chollar ... 802
Report of Treasurer, New England Association ... 280
Report of Treasurer, Western Gas Association ... 769
Report of Treasurer, Ohio Gas Light Association ... 432
Report of Secretary, Ohio Gas Light Association ... 431
Residuals from Coke Manufacturers, Utilization of ... 104
Results from the Van Steenbergh Water Gas Apparatus ... 254
Resistance to Fire of Wood Posts ... 774
*Retort Lid, Prindle's ... 4
Revivification of Oxide of Iron, by W. A. Learned ... 316
Rights of Cities and Towns to Operate Gas and Electric Light Plants; Opinion of Attorney General of Mass. in Respect to the ... 738
Rock Pressure of Natural Gas in the Trenton Limestone of Ohio and Indiana, Origin of the ... 105
Roll Call, New England Association ... 248
Roll Call, Ohio Gas Light Associotion ... 432
Roll Call, Western Gas Association ... 766
Rollins, James Henri, Obituary ... 909
Roofing, Carcass, by J. Robinson ... 735
Rosewater, Victor. An Argument in Favor of the Municipal Ownership of Electric Lighting Plants ... 429

S

*Safety Device for Gas or Air Pipes, Jones' ... 624
Scientific Research, Fields for ... 659
Servia, Petroleum in ... 561
Sharing, Profit ... 625
Ships, Elcctric Lighting of ... 75
Slater, A. B., on Why I Shall Make Water Gas ... 320
Smith, Watson, on Naphthaline ... 6
Snow, W. H., A Chapter of Don'ts ... 393
Some Experiments in the Photometer Room, by N.W. Gifford. 317
Some Facts Connected with the Manufacture of Water Gas, by Dr. W. A. Wilkinson ... 587
Somerville, Jas., Did Dr. Wilkinson Confine Himself to Facts? 695
Somerville, Jas., The Effect of Natural Gas Competition ... 911
Special English Correspondence, by N. H. Humphrys ... 108, 286, 434, 594, 737, 917
Specific Gravity and Illuminating Power of Coal Gas ... 136
Spontaneous Combustion in Coal Ships ... 700
Springfield (Mass.) Gas Company, Annual Meeting ... 141
*Square Pipe, Former for ... 75
Steam Jackets, Their Mode of Action, and the Reasons of their Economy ... 8
Steam Discharge Through Orifices ... 633
*Steel Pressure Blower ... 136
Steel Melting by Water Gas ... 633
Street Lighting Statistics, Ohio, by W. C. Hedges (with Table of Prices) ... 477
Street Lighting Statistics, New York, Public ... 521
Study of Coal Gas, M. Sainte-Claire Deville's ... 207
Subsided Gas Mains, Experience with ... 557
Sulphate of Ammonia as a Manure ... 315
Sundry Matters, Ohio Gas Light Association ... 477
Supreme Judicial Court of Massachusetts Differs from Attorney-General Waterman ... 809

T

Taber, Robert B. President's Address, New England Association ... 278
Tanks, Construction of Gasholder ... 664
Taylor, B., How to Manage Steam Engines ... 846
Technical Education ... 213
Telegrams of Regret, Ohio Gas Light Association ... 468
*Test of an Otto Gas Engine, by E. Kidwell and E. R. Keiler ... 208
*Testing the Gradients of Pipes, Device for ... 212
Testing Materials ... 663
*Terrace's Parallel Motion for Gasholder Guiding ... 662
The Three-Lift Holder at Dowsholm Station, Glasgow Corporation Gas Works ... 427
*Thompson, Geo. T. Impressions of British Gas Workа ... 843
Thoughts on Electric Units ... 398
*Three Types of Electric Meters ... 176
*Thwaite's Gas-Fired Boiler ... 523
Tinting Incandescent Lamp Bulbs ... 251
Trewby, Mr., on the Manufacture of Water Gas ... 106

U

Uniform Rates, Graduated vs., by Charles R. Faben, Jr ... 468
Units, Electrical Thoughts on ... 398
Useful Memoranda and Information for Engineers ... 705
Utilization of Residuals from Coke Manufacture ... 104

V

Vagaries of the Electricians, The ... 212
*Valve Indicator, The Meyer ... 396
Van Steenberg Water Gas Apparatus, Results from ... 354
*Vaporization and Feed of Oil to Generator and Retort, by W. R. Addicks ... 556
Various Methods of Introducing Gas Stoves, by H. A. Norton 322
Votes of Thanks, Western Gas Association ... 557
Votes of Thanks, Ohio Gas Light Association ... 916-917

W

*Walker Gas Washer, The ... 211
*Washer, The Kusnezor Gas ... 42
Waste of Raw Material in Gas Manufacture ... 627
Washington's Coal Fields, by W. J. Wood ... 665
Water Gas, Mr. Trewby on the Manufacture of ... 106
Water Gas, The Mass. Board of Gas and Electric Light Commissioners on the Subject of ... 245
Water Gas Apparatus, Van Steenberg's, Results from ... 354
Water Gas Manufacture, Some Facts Connected with the, by Dr. W. A. Wilkinson ... 587
Water, the Boiling of is not a Guarantee of Purity ... 885
*Webb, Prof. J. B., Note on Rankine's Treatment of Chimney Draft ... 171
Welsbach Company Secures Controlling Interest in Siemens-Lungren Company ... 801
West, Mr. John A. on Gas and Electricity ... 172
Why I Shall Make Water Gas, by A. B. Slater ... 320
Wilkiemeyer, H., Municipal Control of Lighting ... 471
Wilkinson, Dr., Did He Confine Himself to Facts, by James Somerville ... 695
Wiring in Boston Buildings, Proposed Legislation in the Matter of Electric ... 3
Wood, Preservation of by Chemical Means ... 666
Wood Posts, Their Resistance to Fire ... 774
Woodward Ralph. Some Notes Taken in a Small Gas Works 355
World's Fair and the Gas Associations, by Walton Clark ... 838

X Y Z

Yorke, E. H., on Problems Constantly Before the Gas Manager 359